

U.S. Application Serial  
No. 09/333,159

Attorney Docket No.  
MBI099-030RCEM

**Clean Copy of Claims, as Amended  
in the Amendment Filed in Response to the  
Office Action Dated February 14, 2003**

1. (Amended Four Times) An isolated nucleic acid molecule, or its complement, wherein the isolated nucleic acid i) encodes a polypeptide which exhibits lipase activity and ii) is selected from the group consisting of:

a) a nucleic acid molecule having a nucleotide sequence which is at least 90% identical to the nucleotide sequence of SEQ ID NO: 45 or 46;

b) a nucleic acid molecule comprising a fragment of SEQ ID NO: 45 or 46;

c) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence encoded by SEQ ID NO: 46;

d) a nucleic acid molecule which encodes a fragment of the amino acid sequence encoded by SEQ ID NO: 46; and

e) a nucleic acid molecule which encodes a variant of the amino acid sequence encoded by SEQ ID NO: 46, wherein the nucleic acid molecule hybridizes over its full length in 6× sodium chloride/sodium citrate (SSC) at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a portion of a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.

39. (Twice Amended) The isolated nucleic acid molecule of claim 1, or its complement, wherein the molecule hybridizes over its full length in 6× SSC at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.

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24. The isolated nucleic acid molecule of claim 1, or its complement, wherein the nucleic acid molecule has a sequence which is at least 90% identical to the nucleotide sequence of SEQ ID NO: 45 or 46.

25. The isolated nucleic acid molecule of claim 24, or its complement, wherein the nucleic acid molecule has a sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO: 45 or 46.

26. The isolated nucleic acid molecule of claim 1, or its complement, wherein the nucleic acid molecule comprises a fragment of SEQ ID NO: 45 or 46.

27. The isolated nucleic acid molecule of claim 26, or its complement, wherein the nucleic acid molecule comprises at least 150 nucleotide residues and has a nucleotide sequence identical to at least 150 consecutive nucleotide residues of SEQ ID NO: 45 or 46.

28. The isolated nucleic acid molecule of claim 27, or its complement, wherein the nucleic acid molecule comprises at least 500 nucleotide residues and has a nucleotide sequence identical to at least 500 consecutive nucleotide residues of SEQ ID NO: 45 or 46.

29. The isolated nucleic acid molecule of claim 1, or its complement, wherein the nucleic acid molecule encodes a polypeptide comprising the amino acid sequence encoded by SEQ ID NO: 46.

30. The isolated nucleic acid molecule of claim 1, or its complement, wherein the nucleic acid molecule encodes a polypeptide comprising a fragment of the amino acid sequence encoded by SEQ ID NO: 46.

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31. The isolated nucleic acid molecule of claim 30, or its complement, wherein the nucleic acid molecule encodes at least 25 consecutive amino acid residues of the amino acid sequence encoded by SEQ ID NO: 46.

33. (Twice Amended) The isolated nucleic acid molecule of claim 30, or its complement, wherein the nucleic acid molecule encodes a polypeptide comprising a fragment which comprises an immunogenic portion of the protein having the amino acid sequence encoded by SEQ ID NO: 46.

32. (Thrice Amended) The isolated nucleic acid molecule of claim 1, or its complement, wherein the nucleic acid molecule encodes a variant of the amino acid sequence encoded by SEQ ID NO: 46, wherein the nucleic acid molecule hybridizes over its full length in 6× SSC at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.

2. The isolated nucleic acid molecule of claim 1, or its complement, wherein the molecule is selected from the group consisting of:

a) a nucleic acid having the nucleotide sequence of SEQ ID NO: 45 or 46; and

b) a nucleic acid molecule which encodes the amino acid sequence encoded by SEQ ID NO: 46.

3. (Amended) The nucleic acid molecule of claim 1, or its complement, further comprising vector nucleic acid sequences.

4. (Amended) The nucleic acid molecule of claim 1, or its complement, further comprising nucleic acid sequences encoding a heterologous polypeptide.

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5. (Amended) A host cell which contains the nucleic acid molecule of claim 1 or its complement.

6. The host cell of claim 5 which is a mammalian host cell.

34. The host cell of claim 5, which is a prokaryotic host cell.

7. A non-human mammalian host cell containing the nucleic acid molecule of claim 1 or its complement.

12. A method for producing a polypeptide that exhibits lipase activity, the method comprising culturing the host cell of claim 5 under conditions in which the nucleic acid molecule is expressed.

35. The method of claim 12, wherein the polypeptide comprises the amino acid sequence encoded by SEQ ID NO: 46.

36. The method of claim 12, wherein the polypeptide comprises a fragment of the amino acid sequence encoded by SEQ ID NO: 46.

41. The method of claim 36, wherein the polypeptide is an immunogenic portion of the protein having the amino acid sequence encoded by SEQ ID NO: 46.

37. (Thrice Amended) The method of claim 12, wherein the polypeptide is a variant of the polypeptide encoded by SEQ ID NO: 46, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes over its full length in 6× SSC at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46, or a complement thereof.

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42. The method of claim 37, wherein the polypeptide is an immunogenic portion of the protein having the amino acid sequence encoded by SEQ ID NO: 46.

43. (Amended) An isolated nucleic acid molecule, or its complement, wherein the isolated nucleic acid i) encodes an immunogenic portion of the protein having the amino acid sequence encoded by SEQ ID NO: 46 and ii) is selected from the group consisting of:

a) a nucleic acid molecule having a nucleotide sequence which is at least 90% identical to the nucleotide sequence of SEQ ID NO: 45 or 46;

b) a nucleic acid molecule comprising a fragment of SEQ ID NO: 45 or 46;

c) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence encoded by SEQ ID NO: 46;

d) a nucleic acid molecule which encodes a fragment of the amino acid sequence encoded by SEQ ID NO: 46; and

e) a nucleic acid molecule which encodes a variant of the amino acid sequence encoded by SEQ ID NO: 46, wherein the nucleic acid molecule hybridizes over its full length in 6× sodium chloride/sodium citrate (SSC) at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a portion of a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.

44. (Amended) The isolated nucleic acid molecule of claim 43, or its complement, wherein the molecule hybridizes over its full length in 6× SSC at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.

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45. The isolated nucleic acid molecule of claim 43, or its complement, wherein the nucleic acid molecule has a sequence which is at least 90% identical to the nucleotide sequence of SEQ ID NO: 45 or 46.

46. The isolated nucleic acid molecule of claim 45, or its complement, wherein the nucleic acid molecule has a sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO: 45 or 46.

47. The isolated nucleic acid molecule of claim 43, or its complement, wherein the nucleic acid molecule comprises a fragment of SEQ ID NO: 45 or 46.

48. The isolated nucleic acid molecule of claim 47, or its complement, wherein the nucleic acid molecule comprises at least 150 nucleotide residues and has a nucleotide sequence identical to at least 150 consecutive nucleotide residues of SEQ ID NO: 45 or 46.

49. The isolated nucleic acid molecule of claim 48, or its complement, wherein the nucleic acid molecule comprises at least 500 nucleotide residues and has a nucleotide sequence identical to at least 500 consecutive nucleotide residues of SEQ ID NO: 45 or 46.

50. The isolated nucleic acid molecule of claim 43, or its complement, wherein the nucleic acid molecule encodes a polypeptide comprising the amino acid sequence encoded by SEQ ID NO: 46.

51. The isolated nucleic acid molecule of claim 43, or its complement, wherein the nucleic acid molecule encodes a fragment of the amino acid sequence encoded by SEQ ID NO: 46.

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52. The isolated nucleic acid molecule of claim 51, or its complement, wherein the nucleic acid molecule encodes at least 25 consecutive amino acid residues of the amino acid sequence encoded by SEQ ID NO: 46.

53. The isolated nucleic acid molecule of claim 51, or its complement, wherein the polypeptide exhibits lipase activity.

54. (Amended) The isolated nucleic acid molecule of claim 43, or its complement, wherein the nucleic acid molecule encodes a variant of the amino acid sequence encoded by SEQ ID NO: 46, wherein the nucleic acid molecule hybridizes over its full length in  $6\times$  SSC at about  $45^{\circ}\text{C}$ , followed by one or more washes in  $0.2\times$  SSC, 0.1% SDS at  $50^{\circ}\text{C}$  with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.

55. The isolated nucleic acid molecule of claim 43, or its complement, which is selected from the group consisting of:

- a) a nucleic acid having the nucleotide sequence of SEQ ID NO: 45 or 46; and
- b) a nucleic acid molecule which encodes the amino acid sequence encoded by SEQ ID NO: 46.

56. The nucleic acid molecule of claim 43, or its complement, further comprising vector nucleic acid sequences.

57. The nucleic acid molecule of claim 43, or its complement, further comprising nucleic acid sequences encoding a heterologous polypeptide.

58. A host cell which contains the nucleic acid molecule of claim 43 or its complement.

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59. The host cell of claim 58 which is a mammalian host cell.

60. The host cell of claim 58, which is a prokaryotic host cell.

61. A non-human mammalian host cell containing the nucleic acid molecule of claim 43 or its complement.

62. A method for producing an immunogenic portion of the protein having the amino acid sequence encoded by SEQ ID NO: 46, the method comprising culturing the host cell of claim 58 under conditions in which the nucleic acid molecule is expressed.

63. The method of claim 62, wherein the polypeptide comprises the amino acid sequence encoded by SEQ ID NO: 46.

64. The method of claim 62, wherein the polypeptide comprises a fragment of the amino acid sequence encoded by SEQ ID NO: 46.

38. The method of claim 64, wherein the polypeptide exhibits lipase activity.

65. (Twice Amended) The method of claim 62, wherein the immunogenic portion is from a variant of the polypeptide encoded by SEQ ID NO: 46, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes over its full length in 6× SSC at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46, or a complement thereof.

40. The method of claim 65, wherein the polypeptide exhibits lipase activity.



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66. An isolated nucleic acid probe or primer, or its complement, that comprises at least 100 nucleotide residues, has a nucleotide sequence identical to at least 100 consecutive nucleotide residues of SEQ ID NO: 45 or 46, and hybridizes in 6× sodium chloride/sodium citrate (SSC) at about 45°C, followed by one or more washes in 0.2× SSC, 0.1% SDS at 50°C with a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 45 or 46.